

THE METAPHYSICAL ROLE OF CAUSAL ROLES

A Dissertation
submitted to the Faculty of the
Graduate School of Arts and Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Doctor of Philosophy in Philosophy

By

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Washington, D.C.
November 30th, 2010

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PREVIEW

THE METAPHYSICAL ROLE OF CAUSAL ROLES

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ABSTRACT

This dissertation has two primary aims. First, it introduces and clarifies The Principle of the Identity of Causal Indiscernibles:

ICI If A and B are causally indiscernible, then $A = B$.

A and B are causally indiscernible if and only if they have all the same causes and effects. Chapter 1 identifies a wide variety of philosophical debates in which ICI is assumed without apparent recognition. This work is valuable first for ferreting out such a widely-held but seldom acknowledged principle and bringing it to light. I argue that ICI is assumed in formulations of The Problem of Causal Exclusion, The Overdetermination Argument, The Causal Argument, The Problem of Qua Causation, and The Argument from the Identity of Causal Roles.

But second, and more substantially, this dissertation is dedicated to refuting ICI and a number of considerations that might be thought to motivate it. Chapter 2 argues against ICI straightforwardly. Chapter 3 raises and refutes objections against the conclusion of chapter 2 that may be found explicitly in the literatures referenced in chapter 1: that if A and B were to bring about a common effect E, then either (i) E would be overdetermined, (ii) A and B would be joint causes of E, or (iii) contrary to appearances, either A or B is only an ersatz cause of E. In chapter 4, I raise two more objections that have been referenced only obliquely in the literature. I clarify and refute each.

ACKNOWLEDGMENTS

Let me first thank my committee members, Steve Kuhn, James Mattingly, Linda Wetzel, and especially the chair, Wayne A. Davis. Throughout the course of writing, I asked Professor Davis to read an obnoxious number of drafts, some of them substantially different from their ancestors, and he applied characteristic intense attention to detail and tirelessness to each. In the early going, he suffered through two or three *very* bad drafts of chapters; and although it probably cost him a fortune in ink, he patiently steered me toward a far more incisive thesis and a greatly improved approach to my research. He showed me what philosophy is and how to do it. I've tried to mimic his precise, clean writing style, though my own writing remains a relatively cheap knock-off from the genuine article.

Professor Mattingly lent me his ear just about every day after classes. I've yet to repay him, and I imagine I'll take the debt to my grave. The same goes for Professor Wetzel, who was kind enough to discuss with me not only philosophy, but publishing, professional conferences, and the perils of parenting and romantic relationships. Professor Kuhn is one of the most responsive readers I've ever known or even heard of. I asked him to join my committee very late in the process, but he hardly hesitated to join us, and he caught up very quickly. Even on long drafts, he'd often return comments within a week of receiving them. I hope I can someday accommodate my students as thoroughly as Professor Kuhn did for me.

I am grateful to all my committee members, and I'm extremely fortunate to have written under them. The errors, oversights, awkward phrasings, failures of insight, and overlong, tedious asides in this dissertation are all entirely my own.

Of course, I've also had a great deal of personal support: from my parents, Don and Camille Engelhardt, who did everything a beneficent deity would do, from my siblings, of whom there are too many to name—and who can keep track of all their names, anyway?—and a few very close friends. Among my friends, I'd like to single out Chauncey Maher and Lauren Fleming, who read several drafts and helped me greatly with details both large

and small. In addition, Rob McGrath, Joe Shea, David Bachyrycz, and Christian Golden provided unlimited emotional support, encouragement, the occasional meal—and, to my continuing astonishment, they occasionally let me sleep in their homes. David let's me stay with him every time I visit DC, and Joe even let me live with him for an entire month in his tropical resort-like penthouse in Los Angeles. Finally, and speaking of opulence, I've been lucky enough to have the support of Georgetown University since September 2004, and surely I wouldn't have written a single word of what follows without the freedom and self-confidence afforded me by the University's largesse.

Finally, I would like to acknowledge two events that have bookended my writing, but that I can't say my dissertation has brought me to understand: in August 2007, the birth of my daughter, Madeleine Janine Engelhardt, and in January 2011, the painful passing of my friend and colleague, Lauren Fleming. I don't know what to say about the glory of the former, the agony of the latter, or what either has to do with my dissertation; but I can't help but feel that they, as much as anything else, call out for acknowledgment.

DEDICATION

Dedicated, along with everything I have done since August 2007 and will do henceforth, to
Madeleine Janine Engelhardt.

PREVIEW

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Chapter 1

The Principle of the Identity of Causal Indiscernibles

1.1 Introduction

Do all the metaphysical features of a situation depend on its causal features? Is a given entity's identity fully determined by its causal features? Historically, philosophers have answered these questions in the negative. Even the Stoics, who believed that 'all is body' and that all bodies are either causes or effects believed there is more to an entity and to a situation than its causal features.¹

And yet, the recent philosophical literature disagrees. One finds therein myriad arguments that assume the following proposition. Call it the Principle of the Identity of Causal Indiscernibles:

ICI If A and B are causally indiscernible, then $A = B$.^{2,3}

¹See, for instance, [Sellars, 2006]: 83.

²If it turns out that events are the causal relata, A and B are events: the principle says that the causal indiscernibility of events entails indiscernibility of events; if facts are the causal relata, then A and B are facts. And so on. In this dissertation, I focus primarily on events, and I assume that events are causally related. I do not assume, however, that *only* events are causally related. In some places, I talk of objects or tropes or facts as though they're causally related.

³The antecedent of ICI states that A and B are causally indiscernible *in actuality*. The modal operator embedded in "indiscernibility" of course implies that this relation between A and B is not limited to the actual world. It holds, rather, by some force of necessity. Chapter 2 clarifies the weakest force sufficient for causal indiscernibility; this, however, varies depending on the nature of causation, of which we are presently

Although this principle has 20th century orthodoxy behind it, it deserves closer inspection. If there is more than one entity that stands in no causal relations, then it is patently false. Though 7 and 9 plausibly play the same causal role, 7 is obviously not 9. So we must restrict ICI's application to entities that are 'causally embedded'. Further, given Leibniz's Law, ICI claims that all differences are determined by actual causal differences.

This dissertation is dedicated to refuting ICI and a number of considerations that might be thought to motivate it. Chapter 1 identifies several instances in which ICI is assumed without apparent recognition. Chapter 2 argues against ICI straightforwardly. Chapter 3 raises and refutes objections against the conclusion of chapter 2 that may be found explicitly in the literatures referenced here: that if A and B were to bring about a common effect E, then either (i) E would be overdetermined, (ii) A and B would be joint causes of E, or (iii) contrary to appearances, either A or B is only an ersatz cause of E. In chapter 4, I raise two more objections that have been referenced only obliquely in the literature. I clarify and refute each.

1.2 The Causal/Overdetermination Argument

ICI is a hidden premise in the argument known variously as the Causal Argument and the Overdetermination Argument. (Let us abbreviate it the C/OA.) This is obvious in David Papineau's explication.⁴

ignorant. We seek the weakest force, of course, so as to ascertain conditions for which the antecedent of ICI is true though the conclusion may be false.

⁴See [Papineau, 1993], [Papineau, 2001]. See [Hopkins, 1978], [McGinn, 1982], [Schiffer, 1987], [Loewer, 1995], [Jackson, 1996], [Kim, 1996], [Lowe, 2000] for arguments sufficiently similar to what follows. [Sturgeon, 1998] and [Sturgeon, 1999] make a similar argument under the heading "the Overdetermination Argument", but instead of assuming that all physical occurrences have a physical cause, it is assumed that all physical occurrences have *only* a physical cause. This stronger premise forbids non-physical occurrences from having physical effects whether ICI is true or not. It thus 'puts the pressure' on mental occurrences to be indiscernible from physical occurrences not via causal indiscernibility but because they can't have physical effects otherwise, and it is thereby little affected by the results of our inquiry.

Many effects that we attribute to conscious causes have full physical causes. But it would be absurd to suppose that these effects are caused twice over. So the conscious causes must be identical to some part of those physical causes. ([Papineau, 2002]: 17)

Papineau [Papineau, 2002]: 17-8 glosses his argument as follows:

- (1) Conscious mental occurrences have physical effects (17)
- (2) All physical effects are fully caused by purely *physical* prior histories. (Papineau is not here denying quantum indeterminacy. He notes that we may reformulate the argument to accommodate it; in this case, (2) says that the chances of physical effects are fully fixed by prior physical histories, and (1) says that mental occurrences affect the chances of physical effects.) (17, Papineau's emphasis)
- (3) The physical effects of conscious causes aren't always over-determined by distinct causes. (18)
- (C) At least some conscious mental occurrences are identical to physical occurrences. (18)

Notice two things. First, note that premise (2) in the gloss might be read so as to be stronger than the first sentence of the previous quotation. In the quotation, it is assumed only that the effects of conscious causes have 'full' physical causes; it is left open whether these effects have any other causes. One might read premise (2), however, as claiming that the effects in question have 'purely' physical histories—that is, nothing non-physical is to be found in their causal histories. But this claim would beg the question, and it's not plausibly what Papineau had in mind. If he had, he could have left premise (3) out; for (1) and the reading of (2) under consideration entail (C).

Second, notice that Papineau assimilates being overdetermined and *being caused twice over* or, at least, being *absurdly* caused twice over. Does having more than one cause suffice

to be overdetermined or to be absurdly caused twice over? I address the issue in chapter 3, but for now, let us take Papineau's terminology for granted.

As applied to a case of singular causation, then, the argument is as follows:

- (1) Conscious cause A is a sufficient cause of E
- (2) Physical cause B is a sufficient cause of E
- (4) E is not overdetermined

Hence:

- (C) $A = B$

Papineau claims it would be absurd to suppose that the effects of conscious causes are brought about 'twice over'. If a conscious cause, A, and a co-occurrent physical cause, B, play the same token causal role, then *all* of their effects would seem to have more than one cause. Plausibly, then, it's a crucial but unmentioned premise of Papineau's formulation that non-identical entities do not play the same token causal role. This is the contrapositive of ICI.

ICI_c If $A \neq B$, then A and B are causally discernible.⁵

Without ICI_c, we may conclude from this argument only that between mental occurrences and certain physical occurrences, there is not the "absurd", "twice over" causing of mental effects. Suppose this is just the same as "overdetermination". If mental and physical causes are identical, then, it is true, the effects of mental causes shall not be overdetermined. But it is not clear that mental-physical identity is necessary to avoid overdetermining mental effects. Rather, it seems at least logically possible that there are non-absurd ways for mental and physical causes to bring about common effects. I spell out one such way in chapter 3, "Coupled Causes". For now, let us refer to all such ways as cases in which the two (or more)

⁵For Cxy: x is causally discernible from y, Dxy: x is discernible from y, ICI_c says " $(x)(y)(Dxy \rightarrow Cxy)$ " and ICI says " $(x)(y)(\neg Cxy \rightarrow \neg Dxy)$ ".

causes “act as a single cause”. Where A and B act as a single cause, it does not follow that $A = B$; or, at the very least, we should not accept as much without argument.

1.3 Causal Exclusion

Discussions of “The Problem of Causal Exclusion” also presuppose ICI’s contrapositive. In brief, the problem of causal exclusion adopts the same premises as the C/OA but denies that argument’s identity conclusion. Rather, it takes the purported non-identity of mental and physical causes, $A \neq B$ here, as an assumption and argues by *reductio ad absurdum* either that one of the purported causes is in fact an epiphenomenon or even that one of the entities in question does not ‘really’ exist. It’s always the purported mental cause, A, that’s alleged to be epiphenomenal or non-existent of course.

- (2) Physical cause B is a sufficient cause of E
- (4) E is not overdetermined
- (5) $A \neq B$

Hence:

- (C) A is not a sufficient cause of E⁶

Here, for instance, is Karen Bennett’s helpful mock-up.⁷ Those who think exclusion is a problem take 1 - 5 to be inconsistent.

- (1) **Distinctness** Mental properties (and perhaps events) are distinct from physical properties (or events).

⁶Many credit/debit [Malcolm, 1968] with first raising the problem and [Kim, 1989] with cementing its notoriety. But Kim also cites [Edwards, 1758] as raising an exclusion problem; furthermore, see [Patterson, 2005]: 250 for a discussion of “The Divine Exclusion Argument” in medieval philosophy and [Ott, 2010] for the proposal that John Locke gave an exclusion argument as well. [Merricks, 2001] argues on these grounds for the elimination of non-living macroscopic objects. The problem is also discussed in, inter multos alios, [Malcolm, 1968, Goldman, 1969, Prior et al., 1982, Kim, 1989, McLaughlin, 1989, Crane, 1995, Horgan, 1998, Merricks, 2001, Witmer, 2003, Kim, 2003, Bennett, 2003, Ehring, 2003, Kallestrup, 2006, Walter, 2007, Ney, 2007, Walter, 2008, Harbecke, 2009, Wilson, 2009]. Karen Bennett’s formulation in [Bennett, 2003] and noted below is especially perspicuous, and Kim sets out alternative formulations in [Kim, 2003].

⁷For similar sketches of purportedly inconsistent sets, see [Ritchie, 2005], [Stueber, 2005].

- (2) **Completeness** Every physical occurrence has a sufficient physical cause.
- (3) **Efficacy** Mental events sometimes cause physical ones, and sometimes do so in virtue of their mental properties.
- (4) **Nonoverdetermination** The effects of mental causes are not systematically overdetermined; they are not on a par with the deaths of firing squad victims.
- (5) **Exclusion** No effect has more than one sufficient cause unless it is overdetermined. ([Bennett, 2008]: 280-1) (I have added the numbering for convenient reference.)

The last two propositions establish that the effects of mental occurrences do not systematically have more than one sufficient cause. Propositions (2) and (3) establish that the effects of mental occurrences are also effects of physical occurrences. Given the result of propositions (4) and (5), we must conclude that mental and physical occurrences must act as a single cause.⁸ That is, they are causally indiscernible. So far, so consistent.

As in Papineau, though, psycho-physical discernibility is presumed to contradict psycho-physical causal indiscernibility. But the proposition that mental properties (and perhaps events) are discernible from physical properties (and perhaps events) does not straightforwardly entail that mental properties (and perhaps events) are *causally* discernible from physical properties (and perhaps events). Moreover, if this entailment is blocked, then these five propositions are consistent: mental and physical occurrences are causally indiscernible (as per (2) - (5)) but not indiscernible across the board (as per (1)). If we are to make the set inconsistent, we must append another proposition, namely: if two occurrences are discernible, then they are causally discernible, i.e. ICI_c .

1.4 Qua-Causation

The problem of qua-causation arises in many contexts, but it is most famous as an objection to Donald Davidson's Anomalous Monism. According to Davidson's view, the mental entities

⁸Though, again, the modal force of 'must' is left unspecified.

that are causally efficacious are event-tokens, and these are identical to physical event-tokens. Their causal indiscernibility follows from their identity, of course, so ICI is irrelevant as concerns Davidson's mental and physical event-tokens. The problem of qua-causation arises, however, for mental and physical *properties*, which Davidson claims to be discernible.

Ernest Sosa raises the issue by analogy⁹:

I have drawn an analogy between the relevance of mental properties to the causal efficacy that AM [Anomalous Monism] grants to mental events and the relevance of loudness to the causal efficacy of a loud shot. Neither the mentality of mental events nor the loudness of the loud shot is causally relevant to the respective relevant effects. ([Sosa, 1995]: 41)

There are three ideas here. (A) the causal efficacy of at least some events is rightly attributed to at least one of each of those events' properties, (B) the causal efficacy of at least some events is *not* rightly attributed to at least one of each of those events' properties, and (C) the causal efficacy of Davidson's mental events is rightly attributed to their physical properties and not their mental properties. The conclusion is that Davidson's mental events are causally inert *qua mental*; they are causally potent by dint of their physical properties, not their mental properties. Sosa gives his example in order to establish the first two claims. Intuitively, the shot is lethal (A) because of the force with which it propels the bullet toward the victim's frontal lobe and not (B) because of the shot's loudness. (C), I take it, is meant to follow from the analogy's aptness.

The analogy, however, is inapt, and this for at least two reasons. First, mental and physical occurrences are widely supposed to be *necessarily correlated* for some strength of necessity, and most contemporary philosophers would agree that one, probably the mental, depends on the other. The shot and its loudness, however, are surely correlated only contingently. If one accepts points (A) and (B), it is plausible on its face that properties correlated

⁹For endorsements of this analogy (or others sufficiently similar) and the moral Sosa draws as a problematic, see [Dretske, 1989], [Lepore and Loewer, 1987]

only contingently can diverge in the contributions they make to an event's causal efficacy, but it is not so immediately plausible that properties necessarily correlated can thus diverge.

Second, and relatedly, it is unclear why mental and physical properties should diverge in their contributions to an event's causal efficacy at all. And this, of course, reveals the role of ICI_c in the problem of qua-causation. For it is apparently assumed that since mental and physical properties are discernible, they must make discernible contributions to an event's causal efficacy. If this is not so, then there should be no question of a mental property's causal contribution, and thus no problem of qua-causation. Once again, we have uncovered a hidden premise equivalent to ICI.

1.5 The Argument from the Identity of Causal Role

In *Dispositions*, Stephen Mumford gives the following argument for the identity of dispositional and (their physical, base-) categorical properties:

...the numerically identical causal roles of any two tokens, p_1 and p_2 , entails the identity of p_1 and p_2 . These two tokens could be a disposition and its base where two predicates pick out states, or instantiations of properties, of an object that make exactly the same causal contribution to the behaviour of that object. From this assumption, the argument directs us towards the conclusion that there can only be one state involved which the two predicates pick out in their different ways. ([Mumford, 1998]: 145)

You will recognize the first sentence as the rough equivalent of ICI. It is stated as a general principle here, but rather than justify it as such, Mumford builds it into the premises of his arguments. That is to say, he proposes that it is a fact about *dispositions* that they are exhausted by their causal roles:

1. disposition d_1 = the occupant of causal role R
2. categorical base c_1 = the occupant of causal role R

3. *Therefore*: disposition $d_1 =$ categorical base c_1 ([Mumford, 1998]: 146)¹⁰

Notice that the definite description on the right hand side of the ‘=’ in these arguments is doing all the work. If we take it out, all we have is an argument for the causal indiscernibility of d_1 and c_1 , for they occupy the same causal roles. If we do not assume, in addition, that each causal role has a unique occupant, the argument is invalid.

Moreover, notice that if A and B are causally indiscernible if and only if A and B occupy the same causal role, then to assume that causal roles have only one occupant is to assume that causal indiscernibility entails indiscernibility across the board. ICI is the hidden premise.

1.6 Conclusion

We have shown that (a) several arguments involving problems of mental (or other ‘higher-level’) causation are enthymemes, and (b) ICI or its equivalent is the hidden premise in each case. Not all of the arguments are thereby on an equal footing, however. Let us take a brief look at the upshot if ICI turns out to be false.

As it stands, the C/OA is invalid. ICI is the hidden, validating premise. If it turns out that ICI is false, then in its valid form with ICI added, the C/OA is a nonstarter. Unless it can be reformulated without taking ICI as an assumption, it must be abandoned.

So too, *mutatis mutandis*, for the argument from the identity of causal role. Presumably, however, an argument with the same conclusion but reformulated so as to eschew ICI could not be called an “argument from the identity of causal role”. So there seems to be no hope for it if ICI is false.

The problem of causal exclusion, on the other hand, may yet remain if ICI is false. For, the thrust of the **Distinctness** proposition may not be to discern mental and physical

¹⁰Notice that one might wish to bolster Mumford’s argument by adding that d_1 is *essentially* the occupant of R and c_1 is *essentially* the occupant of R as well. Still, however, 3 would not follow. Non-identical entities may both have a feature essentially without both having *all* the same essential features. It’s plausible that both 5 and 6 are essentially greater than 0, but $5 \neq 6$.

occurrences *at all*, but only *causally*. In this case, it is no matter whether ICI is false: causal discernibility is assumed, and yet apparently precluded by the other premises. Sturgeon (1998) and Sturgeon (1999) might be read so as to endorse this reading of **Distinctness**, and the solution proposed there is compatible with it. It is rather dubious, however, that all of the contributors to the debates over causal exclusion understand the proposition in this way. Many “Compatibilists” in the discussion take it that mental and physical occurrences are causally indiscernible.¹¹ This suffices for psycho-physical causal indiscernibility, and so it is straightforwardly contradictory with the causal discernibility reading of **Distinctness**. Presumably, then, Compatibilists read **Distinctness** as proposing non-causal discernibility. On this reading, if ICI is false, then the purport of inconsistency falls away from the set of propositions used to characterize the problem of causal exclusion, and the problem falls away as well.

As regards the problem of qua-causation, ICI is in some cases immaterial. As we remarked above, this problem arises in many contexts. We may now add: the ICI is not a necessary premise in some of them. In many of *these* cases, it is implausible that mental and physical occurrences are causally indiscernible, and so the problem is akin to that noted above, in which **Distinctness** proposes causal discernibility. The varieties of Externalism about mental content are plausibly in this camp, Davidson’s Anomalous Monism may not be, and it seems on the face of things that syntactic theories of mental content are safely outside of it—they plausibly advocate mental-physical causal indiscernibility. Let us take these in turn.

¹¹“Causal Compatibilism” comes from Terence Horgan [Horgan, 1998]. Jens Harbecke refers to many of the same ideas under the banner “New Compatibilism” [Harbecke, 2009]: 163. Plausible Compatibilists include Simon Blackburn [Blackburn, 1991], Derk Pereboom and Hilary Kornblith [Pereboom and Kornblith, 1991], Stephen Yablo [Yablo, 1992, Yablo, 1997], Tyler Burge [Burge, 1993], D.H. Mellor [Mellor, 1995], Paul Noordhof [Noordhof, 1997], Eric Marcus [Marcus, 2001]: 58, Derk Pereboom [Pereboom, 2002], D. Gene Witmer [Witmer, 2003]: 204-5, Sydney Shoemaker [Shoemaker, 2004b], Amie L. Thomasson [Thomasson, 2006]: 353, John Carroll and William Carter [Carroll and Carter, 2005]: 14-5, and Karen Bennett [Bennett, 2008, Bennett, 2003].

Anomalous Monists deny that mental occurrences bear systematic relations to physical occurrences. This seems to preclude psycho-physical causal indiscernibility. If one holds, though, that the failures of systematicity occur only outside of situations (or worlds) that bear on the causal profiles of mental and physical occurrences, then one may affirm causal indiscernibility and Anomalous Monism without contradiction. In this case, if ICI is false, then the problem of qua-causation does not arise for Anomalous Monism. The discernibility of mental and physical causes casts no doubt on the causal potency of mental entities.

Advocates of the syntactic theory of mental content propose that each mental occurrence instantiates the same causal profile as a certain symbol in a mental system. That symbol, in turn, instantiates the same causal profile as a physical occurrence. Assuming that this sense of sharing a causal profile is transitive, mental occurrences thus share their causal profiles with certain physical occurrences on this view. If one proposes that these relations hold by necessity, then mental-physical causal indiscernibility is affirmed; and, if the ICI is false, then the problem of qua-causation does not cut against syntactic theories of mental content.

Chapter 2

Married Causes

2.1 Introduction

Chapter 1 reviewed broad swaths of the contemporary philosophical literature in which ICI is assumed; in this chapter, I argue against ICI directly by showing that there are non-identical causal indiscernibles. I call them “Married Causes”. (The name is inspired by the assumption that causes and effects are related by nomic necessity, given background conditions. If so, then married causes are, like married persons, bound together by law, though each retains its individuality.) Consider an event: I cut myself shaving this morning. When I cut myself with the razor, I also cut myself with its blades, and I cut myself quickly. Perhaps these are three distinct events with all the same causal features.

I pursue two broad strategies in arguing that there are married causes. First, whatever the causal relata are, it’s dubious that every one of them is individuated by its causal role. Although we might individuate some of them by their causal roles, there shall remain others generated by “vertical” determination relations. Individuals compose into composites; second-order events may be abstracted from classes of first-order events; etc. Each of these gross entities plays the same causal role as some more basic entity or entities, but is identical to none of them.¹ I exemplify this point in terms of Jaegwon Kim’s account of events.

¹The causally individuated entities may well be more fundamental or ontologically basic than the vertically determined ones—and they may also be less fundamental—but the point remains: our ontology isn’t fully

Second, I argue that the facts about causation do not entail the facts about identities. That is, whatever causal relations reduce to, the conditions sufficient to make it the case that A and B play the same token causal role fall short of the conditions necessary to establish that $A = B$. Suppose, for example, that causal relations reduce to patterns of occurrence in actual and possible circumstances. The received view is that the causal possibilities do not exhaust the metaphysical possibilities.² A and B may then occur in all the same causal possibilities without co-occurring in all the metaphysical possibilities. Their causal roles will then be the same, but their metaphysical/ontological roles needn't be. Their causal indiscernibility does not entail their complete indiscernibility.

After giving these arguments in §§2 and 3, respectively, §4 sketches a few philosophical puzzles for which married causes may be helpful.

2.2 Kimian Events

A deductive argument against ICI would face a number of obstacles: (1) We don't know if causation is irreducible or, if it is reducible, what causation reduces to: counterfactual dependence, nomic necessitation, etc. Ignorant of this, we can't say with certainty what follows from two entities' causal indiscernibility. (2) We don't know the category of the causal relata: facts, events, tropes, etc., and so we don't know their identity conditions either. (3) Even if we did know the category of the causal relata, we don't know their nature: Kimian³ or Davidsonian⁴, etc.⁵ And once these have been settled, it still remains unclear (4) how to compare sufficient conditions on causal indiscernibility with sufficient conditions for identity: whether A and B are causally indiscernible may depend on the laws that subsume A and

determined by the causal roles, and the causal roles are not single-occupancy.

²[Carroll, 2008]: §8.

³[Kim, 1993]

⁴[Davidson, 1980b, Davidson, 1980a, Davidson, 1980c, Davidson, 1985]

⁵See also [Lewis, 1986a], [Bennett, 1988].

B while their ontological (in)discernibility may turn on all of the properties each possesses. How do we compare the two?

These difficulties may seem insurmountable. We cannot hope to decide the nature of causation or of the causal relata, nor can we hope to survey all viable views and show that ICI is false for all of them. But all is not lost for an argument against ICI. On the contrary, although ICI may have some intuitive appeal, very shortly after we attend to some of the pertinent details, ICI's implausibility reveals itself.

Consider Kimian events. I take the far dominant view to be that event tokens are the causal relata⁶; Kimian events, as we shall see presently, are relatively coarse-grained, so far as causal relata are concerned. In Jonathan Schaffer's survey of the approaches to individuating causal relata, only Quine and Davidson propose to individuate causal relata more coarsely. ([Schaffer, 2008a] See §4.2 for a discussion of Davidson's view.) ICI proposes a remarkably coarse individuation of causal relata. Although, for example, the "layered" model of the sciences (as taken on its face) suggests a permissive stance on causal indiscernibles, ICI rejects it. That is, ICI says that the apparent differences between "levels" of analysis or between a composite and its parts are illusory. Rather, given that, say, a composite and its parts are causally indiscernible, it follows from ICI that a composite and its parts are identical.⁷ If we wish to test ICI, then, we should appeal to a relatively coarse-grained account of the causal relata; I propose that we take Kimian events as our test case.

Let's assume for now, then, that if ICI is true, then it's true for Kimian events. That's to say, for all Kimian events A and B, if A and B are causally indiscernible, then $A = B$. In short, if A and B have all the same token causes and effects, then $A = B$. If it helps to have it in symbols, let $Cxy = 'x \text{ is a cause of } y'$:

⁶See, inter alios, [Davidson, 1980b, Davidson, 1980a, Davidson, 1980c, Davidson, 1985], [Kim, 1993], [Lewis, 1986a], [Bennett, 1988], [Paul and Hall, 2003]: 3. [Varzi and Casati, 1996] is a useful anthology.

⁷Contrary to the consensus view on "Composition as Identity". See [Lewis, 1991], [Yi, 1999], [Merricks, 2001], [Sider, 2007]; see [Baxter, 1988a, Baxter, 1988b] for the best known defenses of the minority view that composition *is* identity.

ICI $(x)(y)\{[(e)(Cxe \leftrightarrow Cye) \ \& \ (c)(Ccx \leftrightarrow Ccy)] \rightarrow x = y\}$

We shall see that ICI is false for Kimian events thanks to their “fineness of grain”.⁸ Further, if the causal relata are not Kimian events, the arguments given here may militate against ICI. So long as the causal relata are distinguished as finely as or finer than Kimian events, then so long shall there be entities that are both discernible and causally indiscernible. But as we’ve said, of the proposed causal relata, most are distinguished more finely than are Kimian events. And so ICI is false for all such accounts of the causal relata.⁹

Kimian events are triples of an n-tuple of constitutive individuals, an m-tuple of constitutive properties instantiated by the individual(s), and an l-tuple of times at which this instantiation occurs, the constitutive time(s). In the simplest cases, where each constituent is a one-tuple, we symbolize a Kimian event as follows: $\langle i, P, t \rangle$; and event1 $\langle i_1, P_1, t_1 \rangle =$ event2 $\langle i_2, P_2, t_2 \rangle$ iff $i_1 = i_2, P_1 = P_2,$ and $t_1 = t_2$.¹⁰ (Let us identify one-tuples with their members so we can speak normally about an event as an individual instantiating a property at a time.)

Though Kimian events are individuated partly by their constitutive properties, it is not the case that each Kimian event has no properties besides those constituting it. Kim accepts that “the bolt’s giving way and the bolt’s giving way suddenly are different events.”¹¹ And Kim accepts this even though the bolt’s giving way suddenly necessitates its giving way, such that in both events, the bolt instantiates the property *giving way* at some time. Kim tells us that one of these events is “included” in the other, but he declines to elaborate on the inclusion relation.¹² I take it that the same goes for part-whole relations among constitutive

⁸In short: differences in “constituent individual”, “constituent property”, or “constituent time” suffice to distinguish Kimian events. So far as any of these three things—individuals, properties, or times—may be distinguished in the absence of causal differences, so far may causally indiscernible Kimian events be nonetheless discernible.

⁹Again, the notable exception, Davidsonian events, are discussed in §4.2.

¹⁰ [Kim, 1993]

¹¹ [Kim, 1993]: 42

¹²Kim tells us, “I will not try to give a characterization of ‘inclusion’ for events here; a completely general characterization gets, as far as I know, to be very complicated without being philosophically interesting...”